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Update: New Haven Line (NHL) Catenary Replacement Project
December 9, 2011

This status report will be updated periodically to provide the most current information on the New Haven Line Catenary Replacement Project that is taking place in Connecticut and is fully funded and managed by the Connecticut Department of Transportation (CTDOT).

Background

The New Haven Line (NHL) main line extends 73 miles from Grand Central Terminal in New York City to New Haven, Connecticut. In addition to a predominantly 4-track main line, there are three single-track branch lines: New Canaan, Danbury and Waterbury branches.

Trains operate under two different power sources on the NHL main line - overhead catenary (A/C) and third-rail (D/C) power - converting from one power source to the other while moving in the vicinity of Pelham, New York. No other railroad in the United States requires this type of operation, making the New Haven Line the most complex operation in the United States.

Portions of the overhead catenary system on the NHL main line date to 1914. A key feature of this old catenary system is that it is prone to failure in either extreme heat ("sagging wire") or extreme cold ("brittle wire"). Specifically, when wires are sagging, they can become tangled in the "pantographs" -- the mechanical arms on the top of the cars that collect the power and provide it to the train - both disabling the train and potentially tearing down wires that require sections of track to be taken out of service for lengthy periods of time, resulting in delays to customers.

Current Status of the Catenary Replacement in New York and Connecticut

The New York State NHL catenary section - originally 44 miles of the older, existing fixed termination catenary system - was successfully renewed in 1993 with a state-of-the-art constant tension catenary system. As the name implies, this type of construction can better accommodate temperature extremes.

CTDOT commenced catenary replacement in 2001. The work was programmed in phases to limit any impact on train service. The CTDOT catenary program, developed in conjunction with Metro-North (MNR), included the replacement of 20 fixed bridges and 2 moveable bridges in four separate phases, utilizing track outages to concurrently work on both the catenary and bridge components of the project in each phase. CTDOT has restructured the catenary program to expedite the catenary replacement with an anticipated completion date of 2015.

Today, of the 172 miles of catenary on the NHL main line in the State of Connecticut, 63% is the new constant tension system and 37% is either the original antiquated system or out of service for repair. The NHL's operation is particularly vulnerable in the 7-mile stretch between Southport and Bridgeport where catenary replacement and 5 bridge projects are underway. Of the four tracks in that area, 2 tracks are normally out of service for catenary replacement and bridge work; all trains, therefore, must operate on the other two tracks under old catenary which hampers MNR's operational flexibility in this area. **However, to alleviate this problem and to combat potential service disruptions, work has been suspended on one of these two tracks this winter, which will increase MNR's operating options, particularly during weather events.**

This system is decades past its useful life and the condition of the system is susceptible to failures, significantly impacting service reliability. As a result, customers may experience delays during this critical ongoing infrastructure improvement.

Total Miles of NHL Main Line Catenary in CT*	Miles of Catenary Replaced in CT	Miles of Catenary Out-of-Service for Replacement in CT	Miles of Catenary To Be Done in CT	Information Provided
172 (total)	108	7 (4%)	57 (33%)	12/9/11

*excludes yards, sidings and New Canaan main track

(Updates are reflected in bold.)